

## **INDIVIDUAL MALE *Argiope* sp. (Audouin, 1826) SHOWS REPLACEMENT BETWEEN TWO TYPES OF STABILIMENTA**

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Araneidae Clerck, 1757 is one of the largest families of spiders containing 28 genera and 163 species discovered so far from India (Keswani et al., 2012). Aranids are well known as vertical orb web weavers. (Jocqué and Dippenaar-Schoeman, 2006)

The genus *Argiope* Audouin, 1826 has 9 species described so far in India. The genus is well-known for the ‘stabilimentum’ which is a special band of thick, ribbon like silken threads, which is placed in orb webs (Sebastian and Peter, 2009). The adult female spiders of this genus generally form cross pattern on the web, hence commonly referred to as Cross Spiders.









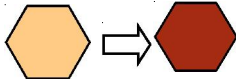


According to Foelix, (2011), the stabilimenta are used for a variety of purposes. Initially it was believed that they had a stabilizing effect (hence the name), but the same author opines that it is very unlikely as those silk bands are only loosely added to the finished web. These thick silk threads of the stabilimenta reflect the sunlight and shine in the day light which attracts insects and the spider staying in the centre of the pattern hunts it down (Foelix, 2011). Lying camouflaged in the center of crossed design and being brightly coloured reduces chances of predation of *Argiope* sp. by birds (Wise 1993). It is also seen that these Spiders generally do not leave their web.

In *Argiope* sp. commonly two types of stabilimenta are seen. One is the cross shaped in which the ribbon like silk threads are placed obliquely and the spider stays in the middle of these threads to complete the cross shape, and the other is the circular type in which the zigzag ribbon like threads is placed in concentric circular fashion, where the spider stays in the centre again. It is presumed that the stabilimenta type is chosen by the individual on the basis of prey base and the area in which the web is built.

It is reported that the same species use both type of stabilimenta, but the same individual using both these types and replacing one type of stabilimentum with another was not reported yet.

I report an opportunistic sighting concerned with the stabilimentum pattern in the Male *Argiope* sp. in the campus of Fergusson College, Pune. On 13<sup>th</sup> September, 2012 at 14.25hr an immature male *Argiope* spider was sighted on a spiny shrub

Table-1: Changes in stabilimentum pattern in the Male *Argiope* sp.

Date and time	Shape of Stabilimenta	Colour of spider	Remarks
14 <sup>th</sup> Sept, 2012 14.00 hr	Half cross pattern as on 13 <sup>th</sup> Sept.  Fig. 1.1	Pale yellowish 	No special remarks
15 <sup>th</sup> Sept, 2012 14.30 hr	Zigzag concentric circular pattern  Fig. 1.2	Pale yellowish 	The previous half cross pattern disappeared completely i.e. the spider replaced one pattern with another
16 <sup>th</sup> Sept, 2012 15.12 hr	Zigzag concentric circular pattern same as on 15 <sup>th</sup> Sept	Slight Darker than the previous 	No special remarks
17 <sup>th</sup> Sept, 2012 14.37 hr	Zigzag concentric circular pattern with certain remarks  Fig. 1.3	same as on 16 <sup>th</sup> Sept 	The circular pattern was seen denser than it was on previous 2 days.
18 <sup>th</sup> , 19 <sup>th</sup> , 20 <sup>th</sup> .Sept, 2012 around 14.07 hr-15.00 hr.	Zigzag concentric circular pattern 	The colour changed gradually from pale yellowish to dark reddish brown. 	The colour changing was possibly the indication of maturation, but no moult was found nearby
22 <sup>nd</sup> Sept, 2012 14.43 hr	Zigzag concentric circular pattern but remarkably thicker 	Dark reddish brown. 	The circular stabilimenta were so thick that the spider resting on the opposite side of the web facing the wall behind could not be seen clearly

Replacement between two types of stabilimenta .....Ashwin Warudkar

resting on an orb web having measurements as approx 160mm vertical diameter and approx 120 mm horizontal diameter. The spider made a half cross pattern of stabilimentum (Fig. 1.1 in Table No. 1) on the web that is with just one diagonal of the cross and was resting in the center of it. I made observations day wise as follows. They are given in Observation table No. 1

After this the spider was probably predated and hence further observations could not be noted.

This behavior of replacing the stabilimenta pattern in male *Argiope sp.* possibly varies according to the prey base in the given area. Records like these can provide significant information about web building behavior of araneae fauna.

#### ACKNOWLEDGEMENTS

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